

CORDIN

SCIENTIFIC IMAGING

HIGH SPEED GATED INTENSIFIED CMOS CAMERA

Models 222, 222-UV

- **8 channels / 16 frames**
- **High resolution CMOS sensor**, 7.1 M pixels, 12 bit dyn. range
- **Extremely short exposure time**, down to 2.5 ns
- **Very high sensitivity**, enabling very short exposures in moderate light or microscope configurations
- **Very high framing rate**, Nanosecond interframe times (selectable from 0 ns to 10 ms in 250 ps steps)
- **Independent control of gain**, exposure time and time delay for each channel
- **Display adjustment** sliding scale to view 8 bit subsamples of full 12 bit images on the fly



The **Cordin Model 222** gated, intensified multi-channel CMOS sensor camera offers the best image quality of any multi-channel intensified camera available. It is a powerful and easy to use tool for studying events in the nanosecond to millisecond time domain. The camera system is based around a plate mirror beam splitter optical system that distributes the image from a single objective lens to eight separate imaging channels without vignetting, parallax or ghosting (-UV model uses a pyramid beam splitter which does incur some parallax). Each channel has an Multi-Channel Plate (MCP) intensifier device fiber-optically coupled to a 7.1M pixel CMOS image sensor, and can capture two images per channel, for a total of 16 images captured by the system. Time between exposures on adjacent channels can be as short as 0 nanoseconds or as long as 10 milliseconds (adjustable in 250 ps increments). Time between exposures on a single channel can be as short as 30 milliseconds.

Operation of the camera is controlled via a Gigabit Ethernet interface with user-friendly software that allows the user to set timing, sequence, gain and triggering. 12 bit images can be saved as TIFF or RAW files, and any 8 bit subsampled image can be saved as BMP or JPG files. Camera settings can also be saved and reloaded later to duplicate a set-up.

The 222 CMOS is a thoroughly new design, building on Cordin's 20+ years of experience in this technology.

OPTIONS

Microscope integration / 20X and 50X microscopic lenses

Tele-focus macro objective lens

Alternate photocathode materials for choice of wavelength range sensitivity

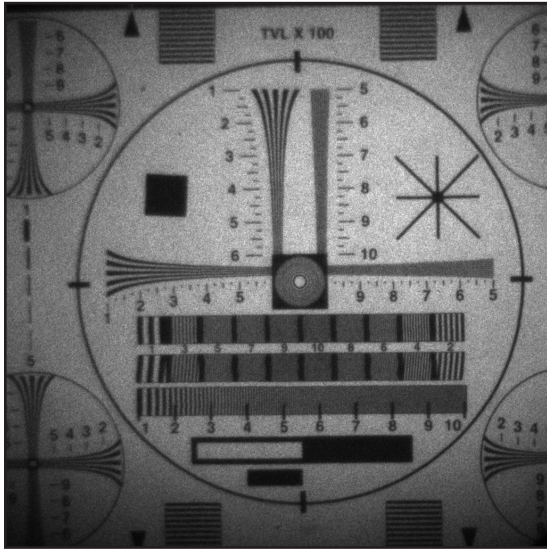
UV configuration (model 222-UV) with 220 - 700 nm spectral range

Modular Design: available with fewer channels, with option of adding channels later as an upgrade

Sync box, allowing two cameras to operate as a single, 16-channel system

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Raw Image of Resolution Chart at 5ns exposure

SPECIFICATIONS

CMOS IMAGE SENSOR

Pixels	3,216 x 2,232
Device Type	Full resolution progressive scan
Dynamic Range	12 bit
Size	14.5 mm x 10.0 mm (4.5 um pixel)
Alternate Mode	2x2 Binning (1,608 x 1,116)

INTENSIFIER

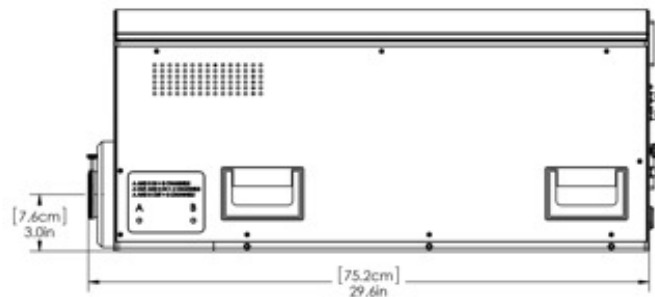
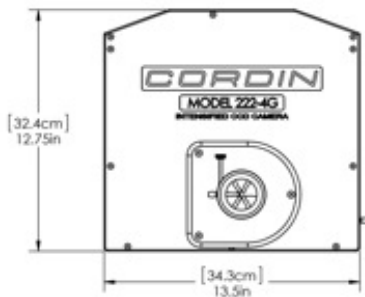
Device	18 mm Ø MCP
Photocathode	Super S25 (S20 on -UV model)
Gain	Up to 10,000:1
Shutter Ratio	10,000,000:1
Grey Scale	42 dB to 48 dB
Resolution	50 lp/mm

OPTICS

Number of Images	16 images on 8 channels
Objective Lens	Nikon F mount (Pentax mount on -UV model, lens not included)
Beam Splitter	Plate mirror system (Pyramid on -UV model)

TRIGGERING AND INTERFACE

Interframe Times	0 ns to 10 ms in 250 ps steps with independent control of each frame
Exposure Times	2.5 ns to 10 ms
System Response	160 ns maximum
Jitter	±3 ns
Input Triggers	Logic Level, direct and isolated; Analog and Optical with threshold
Outputs	Monitor, two programmable TTL outputs on common time base with images
Interface	Gigabit Ethernet



NOTE: Model 222-UV has alternate casing and dimensions.
Contact Cordin for details.